

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

Claims 1 to 13. (Canceled).

14. (Currently Amended) A sheathed element glow plug having an ionic current sensor, comprising:

a housing having a concentric bore; and

a rod-shaped heating element arranged in the concentric bore, the heating element including at least one insulation layer, a first feeder layer, a second feeder layer, and a web, the first feeder layer and the second feeder layer connected by the web on a combustion chamber-side end of the heating element, the first and second feeder layers and the web made of an electrically conducting ceramic material, the insulation layer made of an electrically insulating ceramic material,

wherein one of:

(a) the heating element includes a single including at least one ionic current detection electrode made of an electrically conducting ceramic material and not connected to the first and second feeder layers; and

(b) the first and second feeder layers are arranged to operate as ionic current detection electrodes, an electrical voltage having a same voltage potential being applied to the first and second feeder layers for ionic current detection.

Claim 15. (Canceled).

16. (Currently Amended) The sheathed element glow plug according to claim 14 15, further comprising a first electric terminal and a second electric terminal arranged on an end of the heating element remote from a combustion chamber, the first electric terminal connected to an end of the first feeder layer remote from the combustion chamber, the second electric terminal connected to an end of the second feeder layer remote from the combustion chamber.

17. (Currently Amended) The sheathed element glow plug according to claim 14, wherein the single ionic current detection electrode one of extends inside the insulation layer and is applied to the insulation layer.

18. (Currently Amended) The sheathed element glow plug according to claim 17, wherein the single ionic current detection electrode extends laterally on a surface of the heating element in a direction remote from a combustion chamber in front of an area in which the first and second feeder layers are connected to the combustion chamber-side end of the heating element.

19. (Currently Amended) The sheathed element glow plug according to claim 17, wherein the single ionic current detection electrode extends inside the insulation layer to the combustion chamber-side end of the heating element, the insulation layer extending to the combustion chamber-side end of the heating element.

20. (Currently Amended) The sheathed element glow plug according to claim 17, further comprising:

a first electric terminal connected to the first feeder layer on an end remote from a combustion chamber; and

a second electrical terminal connected to the single ionic current detection electrode on an end remote from the combustion chamber.

21. (Previously Presented) The sheathed element glow plug according to claim 17, wherein the second feeder layer is connected to a ground via the housing.

22. (Previously Presented) The sheathed element glow plug according to claim 14, further comprising a tubular spacer sleeve made of an electrically insulating material arranged within the concentric bore on an end of the heating element remote from a combustion chamber.

23. (Currently Amended) The sheathed element glow plug according to claim 14, wherein the insulation layer, the first feeder layer, the web, the second feeder layer and the single ionic current detection electrode include ceramic composite structures accessible by a

sintering operation in at least one step using at least two of Al_2O_3 , MoSi_2 , Si_3N_4 and Y_2O_3 .

24. (Currently Amended) The sheathed element glow plug according to claim 14, wherein the insulation layer, the web, the first feeder layer, the second feeder layer and the single ionic current detection electrode include a composite precursor ceramic having a matrix material including one of polysiloxanes, polysilsesquioxanes, polysilanes, and polysilazanes, which are dopable with one of boron, nitrogen, and aluminum and are produced by pyrolysis, a filler of the matrix material formed from at least one of Al_2O_3 , MoSi_2 , SiO_2 and SiC .

25. (Currently Amended) A method of operating a sheathed element glow plug having an ionic current sensor, the glow plug including a housing having a concentric bore and a rod-shaped heating element arranged in the concentric bore, the heating element including at least one insulation layer, a first feeder layer, a second feeder layer, and a web, the first feeder layer and the second feeder layer connected by the web on a combustion chamber-side end of the heating element, the first and second feeder layers and the web made of an electrically conducting ceramic material, the insulation layer made of an electrically insulating ceramic material, the heating element including at least one ionic current detection electrode made of an electrically conducting ceramic material, comprising the steps of:

applying, during a glow phase, a first electric voltage to the first feeder layer and a second electric voltage to the second feeder layer, a voltage potential of the first electric voltage different from a voltage potential of the second electric voltage; and

applying, after an end of the glow phase, a third electrical voltage having a same voltage potential to the first and second feeder layers electrodes for ionic current detection.

26. (Currently Amended) A method of operating a sheathed element glow plug having an ionic current sensor, the glow plug including a housing having a concentric bore and a rod-shaped heating element arranged in the concentric bore, the heating element including at least one insulation layer, a first feeder layer, a second feeder layer, and a web, the first feeder layer and the second feeder layer connected by the web on a combustion chamber-side end of the heating element, the first and second feeder layers and the web made of an electrically conducting ceramic material, the insulation layer made of an electrically

insulating ceramic material, the heating element including a single at least one ionic current detection electrode not connected to the first and second feeder layers made of an electrically conducting ceramic material, comprising the step of:

applying, during a glow phase, electric voltages having different voltage potentials to the first and second feeder layers and, at a same time, to the ionic current detection electrode.